

ABSTRACT OF THE INVENTION

Single and multiple ferrite crystal resonator, oscillator, and filter coupling structures are disclosed. In one embodiment, a single ferrite crystal resonator coupling structure is configured as a single pole YIG-tuned-oscillator (YTO) coupling structure. The YTO coupling structure includes a circuit substrate having an upper and a lower side. The circuit substrate includes an aperture extending through the circuit substrate between first and second openings on the upper and lower sides, respectively. The aperture is configured to permit rotation of a ferrite crystal disposable at least partially therein about a plurality of axes whereby a desirable axis of the ferrite crystal is alignable with a magnetic field within the aperture. At least one coupling line through which an electric current can be directed, which extends between a first end and a second end of the first opening of the aperture across at least a portion of the first opening of the aperture. The coupling line or lines may be etched on the lower surface of a coupling substrate positioned over the aperture. A bipolar transistor is mounted on the circuit substrate with an emitter terminal thereof electrically connected to the first end of the coupling line or lines.